

REMARKS

35 USC §112

Claims 1-43 are rejected under 35 USC §112, because the specification, while being enabled for the broadly defined “constituent” there is no explanation of how the composition is arranged/incorporated/formed or structured therein. The Applicant respectfully disagrees.

It may help in this case to go back to the specification in order to address the Examiner’s concerns. Paragraph [0038] in the specification states:

“A multiphase pre-fiber and/or fiber material and/or composition has been produced that a) has sufficient viscosity and suitable melt strength such that it can be spun into a fiber or yarn, b) can be processed by any processing method, including extrusion, c) can be incorporated into the production of a fiber, yarn, textile and/or carpet product, d) allows for reduction of the concentration of or the effect of the low melt material component without being constrained by a particular fiber denier, e) **comprises at least two dispersed constituents and exhibits at least two definitive and differentiable melting points**, and f) can produce a composition, fiber and/or product having at least two constituents each with a different melting point whereby the melt temperature of the constituent having the lower melting point is maintained primarily by minimizing/preventing co-polymerization during blending and processing steps. **These pre-fiber and fiber materials and/or compositions at temperatures are also able to be processed at or below normal processing temperatures for a nylon fiber product.**” (emphasis added)

As described, the “pre-fiber composition” is a combination of at least two dispersed constituents where at least one of them has reacted with the gelling agent in order to solvate that particular constituent. This composition, according to the specification, is one that can be processed into a

fiber, yarn, textile or carpet product. One of ordinary skill in the art of fiber technology should understand that, in claim 1 where the composition comprises a first fiber constituent having a first melting point; a second fiber constituent having a second melting point; and a gelling agent that solvates at least one of the first fiber constituent or the second fiber constituent, wherein the gelling agent significantly reduces co-polymerization of either of the constituents in the composition, the composition is a mixture of these constituents and gelling agent. It is this pre-fiber composition that is further formed into a fiber, but claim 1 is addressing this “pre-fiber formation” composition. At this time, I believe that claim 1 is entirely sufficient to show how the composition is formed, but if the Examiner has any questions that aren’t answered by this explanation, the undersigned Attorney of Record would like to discuss them in a teleconference. A teleconference may help overcome some of the misunderstandings related to this application that paper correspondence cannot.

Claim 20 teaches a fiber that comprises at least two polyamide-based compounds and a gelling agent. It should be clear to one of ordinary skill in the art how a fiber is formed with different compounds and a gelling agent, but if the Examiner has any questions that aren’t answered by this explanation, the undersigned Attorney of Record would like to discuss them in a teleconference. A teleconference may help overcome some of the misunderstandings related to this application that paper correspondence cannot.

Claim 21 is a method of forming a pre-fiber composition, and therefore, should be self-explanatory by definition to one of ordinary skill in the art of fiber technology how the composition is formed.

In response to the Examiner’s comments regarding the definition of a “constituent” on page 8 of the specification, it may be helpful to review the entire paragraph and the paragraph that follows in context:

“A first fiber constituent and a second fiber constituent are the starting points for the formation of a pre-fiber composition, dispersion and/or material, and the mixture of the two can be characterized

as a “binder alloy fiber” or an “alloy mixture”. It should be understood that the first fiber constituent and the second fiber constituent may comprise any suitable monomer, polymer or moiety, as long as each individual or both combined constituents is capable of being used as a fiber material, especially in yarn products, fabric/textile products and/or carpet products.

In one embodiment, the first fiber constituent may comprise at least one amide-based compound and/or polyamide-based compound and the second fiber constituent may comprise at least one second amide-based compound and/or polyamide-based compound. As used herein, the term “compound” means a substance with constant composition that can be broken down into elements by chemical processes. Polyamides and polyamide-based compounds, as the name implies, are polymers that comprise amide monomers. Several contemplated polyamide-based compounds comprise nylon-6, nylon-6,6, “nylon-6,6,6” (nylon-6/nylon-6,6 copolymer) and/or nylon-12.”

As the Examiner can see, the fiber constituent is something that can be used as a fiber material, such as a polyamide-based compound, including nylon-6, nylon-6,6, nylon-6,6,6, and/or nylon-12. The Examiner should realize that the fiber constituent is by definition something that can be used as a fiber. The second paragraph makes that definition clear when describing the polyamide-based compounds. The Examiner may be misreading the paragraphs on page 8 by referring to the paragraph as describing a “constituent” when in fact, it describes and defines a “fiber constituent”. As the Examiner points out, the term “constituent” means an ingredient, element or component, as understood by one of ordinary skill in the art. The Applicant does not disagree, and in fact points out that a “fiber constituent” is an ingredient, element or component that can be used to form a fiber, such as nylon-6. Therefore, the term “fiber constituent” is not broader than the enabling disclosure, as the Examiner contends. However, the undersigned Attorney-of-Record invites the Examiner to contact her to discuss this issue by teleconference, since it may be better resolved by phone than in paper correspondence.

In response to the Examiner’s last paragraph regarding claim 21, upon review, claim 21 does

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have “clear, active steps” given that claim 21 has “providing” steps and “mixing” steps. The Applicant is unclear from the Examiner’s comments what is not clear about claim 21. The undersigned Attorney-of-Record invites the Examiner to contact her to discuss this issue by teleconference, since it may be better resolved by phone than in paper correspondence.

35 USC §102

Claims 3-19 and 23-43 are rejected under 35 USC §102 (b or e) as being anticipated by US Patent 5047459; or US Patent Publication 2002-0991136; or GB 2274109; or US 4745143; or GB 1476997. The Applicant respectfully disagrees.

First, the Applicant contends that the rejections outlined by the Examiner are not proper. All of the claims listed in the rejection are dependent claims. If the Examiner is rejecting only the dependent claims, then they are by definition allowable as being based on allowable independent claims. See MPEP §608.01n. If the Examiner is also rejecting claims 1, 20 and 21, then the Applicant respectfully requests that the Examiner make a note of that fact in the next Action or Notice of Allowance to clear up the record for the case. The Examiner did not clear this up in the present Office Action, and therefore, the Applicant requests again that the Examiner present a clarifying response on this point.

In order to expedite the case, the Applicant will respond with the understanding that the Examiner meant to reject claims 3-19 and 23-43 as applied to claims 1, 20 and 21. With respect to the substantive rejection, claim 1 recites:

“A pre-fiber composition, comprising:

a first fiber constituent having a first melting point;

a second fiber constituent having a second melting point; and

a gelling agent that solvates at least one of the first fiber constituent or the second fiber constituent, wherein the gelling agent significantly reduces co-polymerization of either of the constituents in the composition.”

Claim 20 recites:

“A fiber, comprising:

at least two amide-based polymers, each having a melting point, wherein the melting point of one amide-based polymer is dissimilar to the melting point of a second amide-based polymer; and

a gelling agent that is compatible with at least one of the amide-based polymers,

wherein the fiber comprises two differentiable melting points that are substantially similar to the melting points of each of the amide-based polymers.

Claim 21 recites:

“A method of producing a pre-fiber composition, comprising:

providing a first fiber constituent having a first melting point;

providing a second fiber constituent having a second melting point, wherein the first melting point and the second melting point are dissimilar;

providing at least one gelling agent that is compatible with at least one of the fiber constituents; and

mixing the first fiber constituent, the second fiber constituent and the at least one gelling agent such that there is sufficient viscosity and sufficient melt strength in the composition so that it can be spun into a fiber and such that the first melting point and the second melting point in the fiber are substantially similar to their original values before mixing.”

To address the substantive issues of the Examiner’s rejection, none of the cited references (US 5047459, US 2002-099136, GB 2274109, US 4745143 or GB 1476997) teach all of the claimed elements of the independent claims of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L.*

Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention **“arranged as in the claim”**. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)).

Each reference will be addressed separately herein to illustrate how each reference does not anticipate claims 1, 20 and 21 of the present application.

US PATENT 4745143 ISSUED TO MASON ET AL. (“MASON”)

When reviewing the Mason patent, it is important to review the distinction between the “gelling agent” disclosed in the present application and the “plasticizer” of the Mason patent.

In the present application, the gelling agent is described as an agent that is compatible with the first and/or second fiber constituent without changing the properties of the fiber constituent, such as adjusting the melting point of the constituent. So, after the gelling agent is added, the resulting composition will contain the first fiber constituent having and retaining a first melting point at the second fiber constituent having and retaining a second melting point, whereby co-polymerization between and or all of the constituents has been minimized and/or prevented entirely through the addition of the gelling agent.

The plasticizer of the Mason patent does not act as a gelling agent with the thermoplastic resins disclosed. In fact, the plasticizer purposefully modifies the thermoplastic resins by rendering the polyamide composition resistant to metal halide salts. The plasticizer improves the flexibility of the thermoplastic resin, but does not gelate the thermoplastic resin. In addition, Mason teaches against using caprolactam as a plasticizer for these thermoplastic resins, so clearly the functionalities of these plasticizers are different from the gelling agents disclosed in the present application.

The Examiner has not provided any substantive information – other than reciting the Abstract of the Mason patent – to help the Applicant understand why this reference was selected. The Applicant respectfully requests the Examiner to specifically point out how the Mason reference anticipates the claims of the present application, based on the anticipation standard articulated above.

US PATENT 5047459 ISSUED TO WALDE

When reviewing the Walde patent, it is important to review the distinction between the “gelling agent” disclosed in the present application and the “flame retardant” of the Walde patent.

The Walde patent describes incorporating a fire retardant powder that comprises melamine and an isocyanate-lactam adduct into a thermoplastic composition. There is absolutely no suggestion or teaching that the fire retardant powder acts as a gelling agent to the thermoplastic composition.

The Examiner has not provided any substantive information – other than reciting the Abstract of the Walde patent – to help the Applicant understand why this reference was selected. The Applicant respectfully requests the Examiner to specifically point out how the Walde reference anticipates the claims of the present application, based on the anticipation standard articulated above, including specifically identifying where in the Walde patent does the fire retardant powder act as a gelling agent, as required by the independent claims of the present application.

Therefore, both substantively and procedurally, claims 1, 20 and 21 are allowable as not being anticipated by the cited references (US 5047459, US 2002-099136, GB 2274109, US 4745143 or GB 1476997), and thus, claims 2-19 and 22-43 are allowable as being dependent on allowable independent claims.

US PATENT 2002/0099136 ISSUED TO PARK ET AL. ("PARK")

As with the Mason patent, when reviewing the Park application, it is important to review the distinction between the "gelling agent" disclosed in the present application and the "plasticizer" of the Park application.

In the present Honeywell application, the gelling agent is described as an agent that is compatible with the first and/or second fiber constituent without changing the properties of the fiber constituent, such as adjusting the melting point of the constituent. So, after the gelling agent is added, the resulting composition will contain the first fiber constituent having and retaining a first melting point at the second fiber constituent having and retaining a second melting point, whereby co-polymerization between and or all of the constituents has been minimized and/or prevented entirely through the addition of the gelling agent.

The plasticizer of the Park application does not act as a gelling agent with the polyamide resins disclosed. In fact, the plasticizer purposefully modifies the polyamide resins by changing the melt index of the polyamide resins, such that thickeners must be added to counterbalance the plasticizer addition.. The plasticizer improves the flexibility of the polyamide resin, but does not gelate the thermoplastic resin.

The Examiner has not provided any substantive information – other than reciting the Abstract of the Park application – to help the Applicant understand why this reference was selected. The Applicant respectfully requests the Examiner to specifically point out how the Park application anticipates the claims of the present application, based on the anticipation standard articulated above.

GREAT BRITAIN PATENT 2274109 ISSUED TO WILLIAMS

Claim 1 of the present application requires that the pre-fiber composition comprises a) a first fiber constituent having a first melting point and b) a second fiber constituent having a second melting point. The Williams patent does not contemplate or anticipate claim 1 of the present application, along with claims 20 or 21, because it only utilizes nylon. It does not suggest using two different fiber constituents having two different melting points.

In addition, Williams contemplates utilizing caprolactam to reduce surface defects on the nylon, but there's absolutely no indication or teaching that caprolactam is being used in any amount as a gelling agent for the nylon.

The Examiner has not provided any substantive information – other than reciting the Abstract of the Williams patent – to help the Applicant understand why this reference was selected. The Applicant respectfully requests the Examiner to specifically point out how the Williams patent anticipates the claims of the present application, based on the anticipation standard articulated above.

GREAT BRITAIN PATENT 1476997

Claim 1 of the present application requires that the pre-fiber composition comprises a) a first fiber constituent having a first melting point and b) a second fiber constituent having a second melting point, along with a gelling agent. GB 1476997 does not contemplate or anticipate claim 1 of the present application, along with claims 20 or 21, because it only utilizes polymers reinforced with mineral fillers. In cases where polyamide is disclosed in GB 1476997, it is entirely different from those constituents utilized in the present application. It does not suggest using two different fiber constituents having two different melting points, along with gelling agents.

The Examiner has not provided any substantive information – other than reciting the Abstract of the GB 1476997 patent – to help the Applicant understand why this reference was selected. The Applicant respectfully requests the Examiner to specifically point out how the GB 1476997 patent anticipates the claims of the present application, based on the anticipation standard articulated above.

Conclusion

In conclusion, none of these references teach a pre-fiber composition, comprising: a first fiber constituent having a first melting point; a second fiber constituent having a second melting point; and a gelling agent that solvates at least one of the first fiber constituent or the second fiber constituent, **wherein the gelling agent significantly reduces co-polymerization of either of the constituents in the composition.** (emphasis added). In addition, none of the references alone teach that the fiber or pre-fiber composition of claims 20 or 21 have two distinct and differentiable melting points after formation.

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REQUEST FOR ALLOWANCE

Claims 1-43 are pending in this application, and the Applicant respectfully requests that the Examiner reconsider the claims in light of the arguments presented and allow all pending claims.

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Respectfully submitted,

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